

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1           1. (Currently amended) A method for bypassing use of a protocol  
2   checksum during communications across a reliable network link, comprising:  
3           configuring a communication system to bypass use of the checksum during  
4   communications across the reliable network link;  
5           receiving an outbound packet at a source to be transmitted to a destination  
6   across the reliable network link;  
7           determining whether the outbound packet is directed to a valid destination  
8   that is eligible for checksum bypassing; and  
9           if so, sending the outbound packet to the destination across the reliable  
10   network link without computing the checksum for the outbound packet;  
11           wherein neither the source nor the destination computes the checksum for  
12   the outbound packet.

1           2. (Original) The method of claim 1, wherein configuring the  
2   communication system to bypass the checksum involves informing a protocol stack  
3   within the communication system that network interface hardware for the  
4   communication system is capable of computing the checksum, so that the protocol  
5   stack does not compute the checksum.

1           3. (Currently amended) The method of claim 1, further comprising:

2        ~~determining whether the outbound packet is directed to a valid destination~~  
3        ~~that is eligible for checksum bypassing;~~  
4        if the outbound packet is not directed to a valid destination,  
5        computing the checksum for the outbound packet, and  
6        inserting the checksum into the outbound packet.

1        4. (Original) The method of claim 3, wherein the checksum is computed  
2        by a driver associated with network interface hardware for the communication  
3        system.

1        5. (Original) The method of claim 1, further comprising:  
2        receiving an inbound packet from a source across the reliable network  
3        link; and  
4        accepting the inbound packet without re-computing the checksum;  
5        wherein re-computation of the checksum is required by the communication  
6        protocol to verify that the inbound packet was received without errors.

1        6. (Original) The method of claim 5, wherein accepting the inbound packet  
2        without re-computing the checksum involves:  
3        communicating a default checksum value to a protocol stack within the  
4        communication system;  
5        wherein the default checksum value matches the default checksum value  
6        contained within a checksum field of the inbound packet;  
7        whereby the protocol stack will match the default checksum value with the  
8        checksum field of the inbound packet and will consequently accept the inbound  
9        packet.

1           7. (Original) The method of claim 6, wherein accepting the inbound packet  
2 without re-computing the checksum additionally involves inserting the default  
3 checksum value into the checksum field of the inbound packet.

1           8. (Original) The method of claim 1, wherein the communication protocol  
2 includes one of:

3           Transmission Protocol (TCP);  
4           Internet Protocol (IP); and  
5           User Datagram Protocol (UDP).

1           9. (Currently amended) The method of claim 1, wherein the reliable  
2 network link adheres to the Infiniband<sup>TM</sup> ~~InfiBand~~ standard.

1           10. (Original) The method of claim 2,  
2 wherein the checksum is a TCP checksum; and  
3 wherein the protocol stack is an IP stack.

1           11. (Currently amended) A computer-readable storage medium storing  
2 instructions that when executed by a computer cause the computer to perform a  
3 method for bypassing use of a protocol checksum during communications across a  
4 reliable network link, the method comprising:  
5           configuring a communication system to bypass use of the checksum during  
6 communications across the reliable network link;  
7           receiving an outbound packet at a source to be transmitted to a destination  
8 across the reliable network link;  
9           determining whether the outbound packet is directed to a valid destination  
10 that is eligible for checksum bypassing; and

11        if so, sending the outbound packet to the destination across the reliable  
12 network link without computing the checksum for the outbound packet;  
13        wherein neither the source nor the destination computes the checksum for  
14 the outbound packet.

1            12. (Original) The computer-readable storage medium of claim 11,  
2 wherein configuring the communication system to bypass the checksum involves  
3 informing a protocol stack within the communication system that network interface  
4 hardware for the communication system is capable of computing the checksum, so  
5 that the protocol stack does not compute the checksum.

1            13. (Currently amended) The computer-readable storage medium of claim  
2 11, wherein the method further comprises:  
3        ~~determining whether the outbound packet is directed to a valid destination~~  
4 ~~that is eligible for checksum bypassing;~~  
5        if the outbound packet is not directed to a valid destination,  
6        computing the checksum for the outbound packet, and  
7        inserting the checksum into the outbound packet.

1            14. (Original) The computer-readable storage medium of claim 13,  
2 wherein the checksum is computed by a driver associated with network interface  
3 hardware for the communication system.

1            15. (Original) The computer-readable storage medium of claim 11,  
2 wherein the method further comprises:  
3        receiving an inbound packet from a source across the reliable network  
4 link; and

5           accepting the inbound packet without re-computing the checksum;  
6           wherein re-computation of the checksum is required by the communication  
7 protocol to verify that the inbound packet was received without errors.

1           16. (Original) The computer-readable storage medium of claim 15,  
2 wherein accepting the inbound packet without re-computing the checksum  
3 involves:  
4           communicating a default checksum value to a protocol stack within the  
5 communication system;  
6           wherein the default checksum value matches the default checksum value  
7 contained within a checksum field of the inbound packet;  
8           whereby the protocol stack will match the default checksum value with the  
9 checksum field of the inbound packet and will consequently accept the inbound  
10 packet.

1           17. (Original) The computer-readable storage medium of claim 16,  
2 wherein accepting the inbound packet without re-computing the checksum  
3 additionally involves inserting the default checksum value into the checksum field  
4 of the inbound packet.

1           18. (Original) The computer-readable storage medium of claim 11,  
2 wherein the communication protocol includes one of:  
3           Transmission Protocol (TCP);  
4           Internet Protocol (IP); and  
5           User Datagram Protocol (UDP).

1           19. (Currently amended) The computer-readable storage medium of claim

2 | 11, wherein the reliable network link adheres to the Infiniband<sup>TM</sup> ~~InfiBand~~  
3 standard.

1           20. (Original) The computer-readable storage medium of claim 12,  
2           wherein the checksum is a TCP checksum; and  
3           wherein the protocol stack is an IP stack.

1           21. (Currently amended) An apparatus that bypasses use of a protocol  
2 checksum during communications across a reliable network link, comprising:  
3           a configuration mechanism that selectively configures a communication  
4 system to bypass use of the checksum during communications across the reliable  
5 network link, wherein the configuration mechanism is configured to determine  
6 whether the outbound packet is directed to a valid destination that is eligible for  
7 checksum bypassing;  
8           a receiving mechanism at a source that is configured to receive an  
9 outbound packet to be transmitted to a destination across the reliable network link;  
10 and  
11           a sending mechanism that is configured to send the outbound packet to the  
12 destination across the reliable network link without computing the checksum for  
13 the outbound packet;  
14           wherein neither the source nor the destination computes the checksum for  
15 the outbound packet.

1           22. (Original) The apparatus of claim 21, wherein the configuration  
2 mechanism informs a protocol stack within the communication system that  
3 network interface hardware for the communication system is capable of computing  
4 the checksum, so that the protocol stack does not compute the checksum.

1           23. (Currently amended) The apparatus of claim 21,  
2           ~~wherein the configuration mechanism is configured to determine whether~~  
3 ~~the outbound packet is directed to a valid destination that is eligible for checksum~~  
4 ~~bypassing; and~~  
5           wherein if the outbound packet is not directed to a valid destination, the  
6 configuration mechanism is configured to,  
7           compute the checksum for the outbound packet, and to  
8           insert the checksum into the outbound packet.

1           24. (Original) The apparatus of claim 23, wherein the checksum is  
2 computed by a driver associated with network interface hardware for the  
3 communication system.

1           25. (Original) The apparatus of claim 21, wherein the receiving  
2 mechanism is configured to:  
3           receive an inbound packet from a source across the reliable network link;  
4 and to  
5           accept the inbound packet without re-computing the checksum;  
6           wherein re-computation of the checksum is required by the communication  
7 protocol to verify that the inbound packet was received without errors.

1           26. (Original) The apparatus of claim 25,  
2           wherein the receiving mechanism is configured to communicate a default  
3 checksum value to a protocol stack within the communication system; and  
4           wherein the default checksum value matches the default checksum value  
5 contained within a checksum field of the inbound packet;  
6           whereby the protocol stack will match the default checksum value with the

7 checksum field of the inbound packet and will consequently accept the inbound  
8 packet.

1           27. (Original) The apparatus of claim 26, wherein the receiving  
2 mechanism is additionally configured to insert the default checksum value into the  
3 checksum field of the inbound packet.

1           28. (Original) The apparatus of claim 21, wherein the communication  
2 protocol includes one of:  
3           Transmission Protocol (TCP);  
4           Internet Protocol (IP); and  
5           User Datagram Protocol (UDP).

1           29. (Currently amended) The apparatus of claim 21, wherein the reliable  
2 network link adheres to the Infiniband<sup>TM</sup> ~~InfiBand~~ standard.

1           30. (Original) The apparatus of claim 22,  
2 wherein the checksum is a TCP checksum; and  
3 wherein the protocol stack is an IP stack.